AMENDMENT AND RESPONSE UNDER 37 CFR § 1.111

Serial Number: 10/071,312

Filing Date: February 6, 2002

Title: NETWORK ABSTRACTION OF INPUT/OUTPUT DEVICES

Assignee: Intel Corporation

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AMENDMENTS TO THE CLAIMS

The following listing of claims shall replace all prior listings and versions of

claims in this application.

Listing of Claims:

1. (Currently Amended) A system comprising:

a communication adapter coupled to a transmission medium to transmit and receive data

according to a network protocol, said communication adaptor configured to receive and respond

to requests for storage services from clients,

a data bus coupled to one or more storage nodes, each storage node comprising storage

resources and logic to transmit data to or receive data from a storage medium according to an

input/output format in response to said request for storage services from clients; and

a processing system to host a common transport agent, the common transport agent

comprising a first interface comprising one or more method interfaces to communicate with each

storage node independently of the input/output format of the storage node for transmitting data to

or receiving data from the storage medium, and a second interface comprising one or more

method interfaces to communicate with the communication adapter for communicating with said

clients requesting storage services, the one or more method interfaces of the second interface

being independent of the network protocol.

2. (Original) The system of claim 1, wherein the processing system further comprises a

unit management agent to discover the storage resources of the storage nodes and post an

indication of the discovered storage resources to the network.

3. (Original) The system of claim 2, wherein the unit management agent comprises logic

to establish a connection between a client on the network and a storage node in response to a

connection request from the client.

- 4. (Original) The system of claim 1, wherein the system further comprises a plurality of storage nodes coupled to the data bus.
  - 5. (Original) The system of claim 4, wherein each of the storage nodes comprises:

an input/output controller coupled to a storage medium to store data in or retrieve data from the storage medium according to an input/output format; and

a processing system to host:

a device driver module to communicate with the input/output controller according to the input/output format; and

a remote transport agent to communicate with the first interface of the common transport agent independently of the input/output format.

- 6. (Original) The system of claim 4, wherein each of the storage nodes is coupled to a redundant array of independent disks through an input/output channel.
- 7. (Original) The system of claim 6, wherein the input/output channel comprises one of a small computer system interface and serial ATA adapter.
- 8. (Original) The system of claim 1, wherein the network protocol comprises a network protocol selected from one of Infiniband and TCP/IP.
  - 9. (Canceled)
  - 10-17. (Cancelled)
  - 18. (Currently Amended) A storage node comprising:
  - an I/O controller to store data in and retrieve data from a storage medium according to an I/O format; and
    - a processing system comprising:

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a device driver module to transmit data to and receive data from the I/O

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controller according to the I/O format; and

a remote transport agent coupled to the device driver, the remote transport

agent comprising an a first interface to receive commands to store data in or

retrieve data from the storage medium, the commands being defined in the first

interface by one or more method interfaces which are independent of the I/O

format, and comprising a second interface to receive requests to establish

connections between clients and said storage medium for providing storage

services to said clients.

19. (Canceled)

20. (Original) The storage node of claim 18, wherein the I/O format comprises an I/O

format defined according to one of a version of SCSI and a version of ATA.

21. (Currently Amended) The storage node of claim 18, wherein the storage node is

coupled to a data bus and the first interface comprises one or more method interfaces which are

responsive to bus transactions received on the data bus.

22. (Currently Amended) The storage node of claim 21, wherein the <u>first</u> interface

comprises one or more method interfaces to initiate bus transactions on the data bus.

23. (Currently Amended) The storage node of claim 18, wherein the processing system

comprises a memory and the first interface comprises one or more method interfaces to initiate

remote direct memory access transactions to transfer data between buffers in the memory and the

storage medium.

24. (Original) The storage node of claim 18, wherein the storage node further comprises a

communication adapter coupled to a network to communicate with clients requesting storage

services according to a network protocol.

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25. (Original) The storage node of claim 24, wherein the processing system further

comprises a common transport agent, the common transport agent comprising:

a first interface comprising one or more method interfaces to communicate with the

remote transport agent independently of the input/output format; and

a second interface comprising one or more method interfaces to communicate with the

clients independently of the network protocol.

26. (Original) The storage node of claim 18, wherein the processing system further

comprises a unit management agent to discover the storage resources of one or more storage

nodes and post an indication of the discovered storage resources to the network.

27. (Original) The storage node of claim 24, wherein the network protocol comprises a

network protocol selected from one of Infiniband and TCP/IP.